REMARKS

In the Office Action mailed October 18, 2005, claims 1-19 were rejected. Claims 1, 6, 9, 14 and 19 were rejected under 35 U.S.C. §102(b) as being anticipated by Gill et al., U.S. Pat. No. 5,561,570 ("Gill et al."). Claims 2-4, 7, 8, 10-12 and 15-17 were rejected under 35 U.S.C. §103(a) as being obvious over Gill et al. in view of Maruyama et al., U.S. Pat. No. 5,898,540 ("Maruyama et al."). Claims 5, 13 and 18 were rejected under 35 U.S.C. §103(a) as being obvious over Gill et al., in view of Maruyama et al., in further view of Davis et al., U.S. Pat. No. 6,778,362 ("Davis et al."). Claims 1, 9, 14 and 19 have presently been amended and claims 2, 4, 10, 12, 15 and 17 canceled, such that claims 1, 3, 5-9, 11, 13, 14, 16, 18 and 19 are currently pending.

Claim Rejections - 35 U.S.C. §102(b)

Pending claims 1, 6, 9,14 and 19 were rejected under 35 U.S.C. §102(b) as being anticipated by Gill et al.

Amended independent claim 1 incorporates limitations of original dependent claims 2 and 4. An actuator according to amended independent claim 1 requires an actuator arm that is rotatable in a rotational plane for supporting a transducer with respect to a data storage medium, and a head gimbal assembly connected to the actuator arm at an inclined angle with respect to the rotational plane. The head gimbal assembly includes a load beam, a slider for carrying a transducer, and a gimbal connecting the slider and the load beam. The slider must include an air-bearing surface.

Gill et al. discloses a dynamically loaded suspension for a disc drive that utilizes contact recording. Gill et al. explicitly distinguishes between contact recording drives and drives that utilize sliders with an air bearing surface for "flying" above a recording medium on a cushion of air. (Gill et al., col. 1, line 15 to col. 2, line 38). Gill et al. discloses a combination suspension/transducer-slider structure (or reed) 130 supported by an actuator arm 34. (See Gill et al. FIG. 5). Gill et al. teaches away from "lift-off", which is any separation (i.e., any break in contact) between the transducer/suspension assembly 130 and the magnetic storage media 200. (See Gill et al., col. 2, line 4 to col. 3, line 17; col. 5, ll. 37-52). In order to prevent lift-off, Gill et al. increases

suspension/transducer loading by providing a concave suspension (without a hinge region) and shaping the suspension like an airfoil to further counteract lift-off. (Gill et al., col. 5, line 53 to col. 6, line 50; FIGS. 4B-6). "This counteracts the tendency of [the contact portion of the suspension/transducer structure] to become an air bearing surface . . . ." (Gill et al., col. 6, ll. 8-11).

Gill et al. does not show, teach or disclose each and every limitation required by amended independent claim 1. In particular, Gill et al. does not disclose the use of a slider having an air bearing surface. Instead, Gill et al. utilizes contact recording, where the slider/transducer remains in contact with the magnetic storage medium. These two type of disc drive systems as distinguishable, as noted by Gill et al. The two types of disc drive systems involve different design considerations and are not similar. Gill et al. specifically distinguishes its disclosure from systems that utilize air bearing surfaces. Thus, Gill et al. does not anticipate amended independent claim 1, and the rejection under §102(b) should be withdrawn.

Claim 6 depends from amended independent claim 1 and includes all of the limitations of that base claim. Therefore, for the reasons stated above, dependent claim 6 is also currently in condition for allowance.

Amended independent claim 9 incorporate limitations of original dependent claims 10 and 12. A data storage device according to amended independent claim 9 requires a data storage disc, a rotatable arm and a head gimbal assembly attached to the rotatable arm at an angle so that, when loaded against the disc, the head gimbal assembly is concave in a direction facing away from the disc. The head gimbal must include a load beam having a hinge region, a slider for carrying a transducer, and a gimbal connecting the slider to the distal region of the load beam.

Amended independent claim 14 includes limitations of original dependent claims 15 and 17. An actuator for positioning a transducer with respect to a storage medium in a storage device according to amended independent claim 14 requires a mounting block with a sloped mounting surface with a slope greater than zero degrees but less than ninety degrees with respect to a top plane of the mounting block such that the sloped mounting surface creates a downward plane. A head gimbal assembly must be attached to the sloped mounting surface of the mounting block, and

includes a load beam having a hinge region, a slider for carrying a transducer, and a gimbal connecting the slider to the load beam.

Gill et al. does not show, teach or disclose each and every limitation of amended independent claims 9 and 14. In particular, Gill et al. does not show, teach or disclose a load beam having a hinge region as required by amended independent claims 9 and 14. This is largely due to the fact that Gill et al. discloses increasing the loading of the suspension/transducer on the magnetic medium to maintain contact with the medium's surface. Gill et al. teaches away from any design that would permit lift-off of the suspension/transducer from the magnetic medium, such as a suspension having a hinge region. In contrast, the load beam according to amended independent claims 9 and 14 require a hinge region, which facilitates operation of the drive with the slider supported above a surface of a magnetic medium on a small cushion of air. Thus, Gill et al. does not anticipate amended independent claims 9 and 14, and the rejection under §102(b) should be withdrawn.

Amended independent claim 19 relates to a method of assembling an actuator. The method of amended independent claim 19 requires attaching an unbent head gimbal assembly with a hinge region to a mounting block with a sloped surface, and loading the head gimbal assembly onto a data storage medium to create a permanent bend in the hinge region so that a portion of the head gimbal assembly assumes a concave shape facing away from the data storage medium.

Gill et al does not show, teach or disclose each and every limitation of amended independent claim 19. As discussed above, Gill et al. does not disclose a head gimbal assembly having a hinge region. Moreover, Gill et al. does not disclose making a permanent bend in the hinge region. Thus, Gill et al. does not anticipate amended independent claim 19, and the rejection under §102(b) should be withdrawn.

Claim Rejections - 35 U.S.C. §103(a)

Pending claims 3, 7, 8, 11 and 16 were rejected under 35 U.S.C. §103(a) as being obvious over Gill et al. in view of Maruyama et al.

As discussed above, amended independent claims 1, 9 and 14 are currently allowable over Gill et al. Claims 3, 7 and 8 depend from amended independent claim 1, claim 11 depends from amended independent claim 9, and claims 16 and 17 depend from amended independent claim 14. Dependent claims 1, 7, 8, 11, 16 and 17 each contain all of the limitations of their respective base claims, and are allowable over the prior art of record for the reasons stated above with respect to the rejections under §102(b).

Additional reasoning supports withdrawal of §103(a) rejections stated in the Office Action. Maruyama et al. discloses a magnetic head and slider configuration for contact recording. Maruyama et al. discloses the importance of maintaining sliding contact between the transducing head and themagnetic recording medium. (Maruyama et al., col. 5, line 35 to col. 6, line 34; col. 7, line 1 to col. 8, line 65; col. 9, ll. 23-40; col. 16, ll. 8-12 and 35-38).

The Office Action stated; "One of ordinary skill in the art would have been motivated to provide the actuator assembly of Gill et al[.] with the wedge as set forth, supra as taught by Maruyama et al[.] to reduce the inter-frictional/pushes force between the actuator assembly and the media, thus improving the dynamic loading effect and *flying height characteristics* of the slider in order to improve the read/write characteristics of the head." (Office Action, page 3) (emphasis added). However, Gill et al. specifically teaches away from such a modification. Gill et al. discusses at length the desire to design an actuator and suspension assembly for contact recording, where the assembly is specifically designed to prevent lift-off. (Gill et al., Gill et al., col. 2, line 4 to col. 3, line 17; col. 5, line 37 to col. 6, line 50). Moreover, Maruyama et al. also teaches away from permitting lift-off. (Maruyama et al., col. 7, ll. 1-3; col. 16, ll. 8-12 and 35-38). Thus, the rejection should be withdrawn.

The Office Action further stated that Maruyama et al. discloses a "wedge positioned on a side of the actuator arm that is facing the data storage medium." (Office Action page 3). However, as shown in FIGS. 11b and 21c, the wedge disclosed by Maruyama et al. is actually disposed on the side of the actuator arm that is facing *away* from the data storage medium. Thus, the rejection should be withdrawn.

Claims 5, 13 and 18 were rejected under 35 U.S.C. §103(a) as being obvious over Gill et al., in view of Maruyama et al., in further view of Davis et al. Claim 5 depends from amended independent claim 1, claim 13 depends from amended independent claim 9, and claim 18 depends from amended independent claim 14. Dependent claims 5, 13 and 18 each contain all of the limitations of their respective base claims. Davis et al. discloses a hinged load beam with a torsional spring for use with a disc drive system that supports a slider with an air bearing surface over a data storage medium on a small cushion of air. Davis et al. discloses a system that allows better control of the fly height of the slider relative to the data storage medium. (Davis et al., col. 1, line 16 to col. 2, line 21; col. 3, ll. 14-19). As noted above with respect to the rejections under §102(b), Gill et al. and Maruyama et al. relate to contact recording systems. In contrast, Davis et al. does not relate to contact recording, but rather is directed to a slider with an air bearing surface. The Office Action states: "It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the head gimbal assembly as set forth in Gill et al[.] as modified by Maruyama [et al.] with a notch as set forth, supra as taught by Davis et al[.] to provide high torsional frequencies and high sway frequencies and low spring rate to improve flying characteristics." (Office Action, page 4). However, Davis et al. relates to non-contact recording systems, while both Gill et al. and Maruyama et al. relate only to contact recording systems. A person of ordinary skill in the art would not know to combine the cited references in the manner suggested in the Office Action. The motivation to combine those disparate teachings is not found in any of the cited references, but rather the motivation stated in the Office Action contradicts the explicit teachings of Gill et al. and Maruyama et al., which teach away from the use of "flying" sliders. Therefore, the stated motivation to combine the cited references is improper.

Thus, the rejections under §103(a) should be withdrawn. All of the pending claims are now in condition for allowance over the prior art of record.

CONCLUSION

Upon review of the cited art, applicant believes that all of the pending claims patentably define the invention over all of the art of record. Applicant believes the above amendments and remarks place all pending claims in allowable form and respectfully requests a Notice of Allowance.

The Commissioner is authorized to charge payment of any additional fees associated with this paper or credit any overpayment to Deposit Account No. 11-0982.

Respectfully submitted,

KINNEY & LANGE, P.A.

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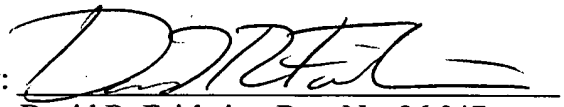
By: 

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